



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1458
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,834	12/29/2000	Pamela A. Binns	H16-25537 US	9272
21186	7590	06/02/2006	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			SURYAWANSHI, SURESH	
			ART UNIT	PAPER NUMBER
			2115	

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/751,834

Applicant(s)

BINNS ET AL.

Examiner

Suresh K. Suryawanshi

Art Unit

2115

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/3/06 amendments.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/13/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-30 are presented for examination.

Drawings

2. This application, filed under former 37 CFR 1.60, lacks formal drawings (specifically Fig. 4 and 8). The informal drawings filed in this application are acceptable for examination purposes. When the application is allowed, applicant will be required to submit new formal drawings. In unusual circumstances, the formal drawings from the abandoned parent application may be transferred by the grant of a petition under 37 CFR 1.182.

Specification

3. The abstract of the disclosure is objected to because it contains more than 150 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Duffield et al (US Patent 6,452,933; hereinafter Duffield).

6. As per claim 1, Duffield discloses

determining available slack [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; absence of packets in queues indicates availability of excess bandwidth]; and

allocating slack to tasks in different time partitions [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; means for redistributing excess bandwidth].

7. As per claim 5, Duffield discloses

scheduling tasks to execute in different time partitions [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; scheduling means];

determining available slack [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; absence of packets in queues indicates availability of excess bandwidth]; and

allocating slack to tasks in different time partitions [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; means for redistributing excess bandwidth].

8. As per claim 6, Duffield discloses

collecting unscheduled execution time from at least one time partition [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; absence of packets in queues indicates availability of excess bandwidth]; and

allocating the unscheduled execution time to a task in another partition [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; means for redistributing excess bandwidth].

9. As per claim 10, Duffield discloses

determining available slack [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; absence of packets in queues indicates availability of excess bandwidth];

pooling available slack in a common slack pool [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; inherent to the system as if there are more than one queues having absence of packets]; and

allocating slack from the common slack pool to tasks [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; means for redistributing excess bandwidth].

Art Unit: 2115

10. As per claim 11, Duffield discloses

determining available slack [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; absence of packets in queues indicates availability of excess bandwidth];

pooling available slack in a common slack pool [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; inherent to the system as if there are more than one queues having absence of packets]; and

allocating slack from the common slack pool to tasks [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; means for redistributing excess bandwidth].

11. As per claim 14, Duffield discloses

scheduling tasks to execute in different time partitions [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; scheduling means];

determining available slack [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; absence of packets in queues indicates availability of excess bandwidth];

pooling available slack in a common slack pool [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; inherent to the system as if there are more than one queues having absence of packets]; and

allocating slack from the common slack pool to tasks [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; means for redistributing excess bandwidth].

12. As per claim 15, Duffield discloses

determining available timeline slack [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; absence of packets in queues indicates availability of excess bandwidth];

determining available reclaimed slack [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; absence of packets in queues indicates availability of excess bandwidth];

Art Unit: 2115

pooling available timeline and reclaimed slack [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; inherent to the system as if there are more than one queues having absence of packets]; and

allocating slack to task in any time partition [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; means for redistributing excess bandwidth].

13. As per claim 18, Duffield discloses

scheduling tasks to execute in different time partition [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; scheduling means];

determining available timeline slack [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; absence of packets in queues indicates availability of excess bandwidth];

determining available reclaimed slack [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; absence of packets in queues indicates availability of excess bandwidth];

pooling available timeline and reclaimed slack [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; inherent to the system as if there are more than one queues having absence of packets]; and

allocating slack to a task in any time partition [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; means for redistributing excess bandwidth].

14. As per claim 19, Duffield discloses

a processor to execute a plurality of tasks [inherent to the system as the system being a packet-based communication system]; and

an executive to be in communication with the processor [Fig. 2; inherent to the system as the system being a packet-based communication system], wherein the executive comprises:

a first module that is to determine available slack [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; absence of packets in queues indicates availability of excess bandwidth]; and

a second module that is to allocate available slack [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; means for redistributing excess bandwidth].

15. As per claims 2, 7, 12 and 16, Duffield discloses the task that are allocated slack are aperiodic, non-essential tasks [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10].

16. As per claims 3, 8, 13 and 17, Duffield discloses that the tasks comprise essential and non-essential tasks [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10].

17. As per claims 4 and 14, Duffield discloses wherein in determining, both timeline slack and reclaimed slack are determined [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10].

18. As per claim 9, Duffield discloses wherein in collecting unscheduled execution time, both timeline slack and reclaimed slack are collected [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10].

19. As per claim 21, Duffield discloses wherein the first module is to maintain a pool of available slack [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; inherent to the system as if there are more than one queues having absence of packets].

20. As per claim 22, Duffield discloses wherein the first module is to maintain a common pool of available slack that can be used by tasks in any time partition [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; inherent to the system as if there are more than one queues having absence of packets].

21. As per claim 23, Duffield discloses wherein the second module is to allocate available slack to tasks that are non-essential [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; means for redistributing excess bandwidth].

22. As per claim 24, Duffield discloses wherein the tasks are from the group consisting of new non-essential tasks and enhancements to essential tasks [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10].

23. As per claim 25, Duffield discloses wherein the executive further comprises a third module that is to assign different priority levels to tasks [Fig. 1; col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10].

24. As per claim 26, Duffield discloses wherein the first module is to determine available tasks at each priority level [Fig. 1; col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10].

25. As per claim 27, Duffield discloses wherein the second module is to allocate available slack to tasks in order of priority [col. 2, lines 33-35, 51-59; col. 3, lines 13-17, 30-33; col. 4, lines 6-8, 18-23; col. 5, line 55 -- col. 6, line 10; means for redistributing excess bandwidth].

26. As per claims 28 and 29, Duffield discloses wherein the system is a flight control, real-time control system [inherent to the system as the invention relates to packet-based communication systems].

27. As per claim 30, Duffield discloses wherein the executive comprises a single set of slack variables and a single slack table [col. 4, line 63 -- col. 5, line 3; col. 5, lines 28-34].

Response to Arguments

28. Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suresh K. Suryawanshi whose telephone number is 571-272-3668. The examiner can normally be reached on 9:00am - 5:30pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2115

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

sks

May 25, 2006



THOMAS LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100